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09/235,062	01/20/1999	JEFFREY L. SCHIFFER	42390.P6280	5229

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EXAMINER
NGUYEN, DAVID Q

ART UNIT	PAPER NUMBER
2681	21

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/235,062	SCHIFFER, JEFFREY L.	
	Examiner	Art Unit	
	David Q Nguyen	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-15,18 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-15,18-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 05/19/03 have been fully considered but they are not persuasive.

In response to applicant's Remarks on page 3, applicants argue that Ogino does not teach or suggest at least the claimed ground plane that at least partially physically blocks emissions from the intentional radiator through an opening in shielding.

Examiner disagrees. Referencing fig. 3, Ogino shows clearly that the ground plane (41) that blocks emissions from the intentional radiator through the opening (49) in shielding.

Applicants argue that Ogino does not teach or suggest the claimed antenna ground plane that is directly connected to shielding by a solder connection between a portion of a surface of the ground plane and the shielding.

Examiner disagrees. As explained in the Response to Arguments of the previous office action (paper no. 17), referencing Fig. 3, Ogino discloses an antenna element (42) which is directly mounted on a multilayered substrate (33), which comprises an uppermost ground plane (41), which is shown directly connected to the antenna element (42) (col. 5, lines 20-23 and co1.6, line 1-5). Further, referencing Fig. 2, Ogino further shows the ground planes (41 and 43 which comprise 33) electrically connected to the shielding (i.e., housing portions 31 and 32) (col. 5,lines 32-41 and col. 6, lines 64-66). Ogino discloses inherently that the electrically connected portions of either ground plane 41 and 43, which comprise 33 are to be soldered to the shielding (i.e., 31 and/or 32) (col. 6, line 61 to col. 7, line 4 and lines 30-36 and 64-67). Thus, Ogino

discloses clearly that an antenna ground plane that is directly connected to shielding by a solder connection between a portion of a surface of the ground plane and the shielding.

Applicants argue that the ground plane 43 cannot be considered to teach the claimed ground plane because it is not directly connected to the antenna.

Examiner disagrees. Examiner considered the ground plane 41 to teach the claimed ground plane because Ogino teach or suggest that the ground plane 41 is connected to the shielding through a direct solder connection between a surface of the ground plane and the shielding as mentioned above.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,3-5,8,9,11-15,18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogino et al. ("Ogino"), U.S. Patent No. 5,668,563.

Regarding claims 1 and 4, Ogino discloses an apparatus comprising an intentional radiator including an antenna (42) and a ground plane (41) directly connected to the antenna, the ground plane to be electrically connected to shielding by a direct solder connection between a portion of a surface of the ground plane and the shielding, the shielding (the housing case 31 & 32, also comprised in the apparatus) includes an opening (49) for the antenna, which is to

positioned such that the antenna radiates through the opening and the ground plane at least partially physically block emissions through the opening (col. 7, lines 30-37 and see Fig. 3).

Regarding claims 3 and 5, dependent on claims 1 and 4, respectively, Ogino discloses the apparatus as above further wherein the intentional radiator comprises a multilayer substrate (33) that reads on a printed circuit board with antenna radiating layer (36) and ground layer (41), first and second layers respectively disposed therein (col. 6,lines 1-18).

Regarding claim 8, dependent on claim 4, Ogino discloses the apparatus as above wherein the intentional radiator comprises a frequency conversion circuit (45) that reads on a radio frequency module (col. 7, lines 15-20).

Regarding 9, Ogino discloses a system (GPS antenna 30) comprising and intentional radiator including and antenna (42) and ground plane (41) directly connected to the antenna (col. 7, lines 30-37); and frequency conversion circuit (45) that reads on a device to be shielded, and shielding and shielding (housing case 31 and 32) enclosing the device to be shielded except for an opening (49), the shielding being coupled to the ground plane (col. 6, lines 64-66), the ground plane being oriented to at least partially physically block emissions through the opening (see Fig. 3).

Regarding 11, dependent on claim 9, Ogino discloses the system wherein the device to be shielded is integrated with the intentional radiator (col. 6, lines 1-18 and Fig. 3).

Regarding claim 12, dependent on claim 9, Ogino discloses the system wherein the intentional radiator includes a multilayer substrate (33) that reads on a printed circuit board with antenna radiating layer (36) and ground layer (41), first and second layers respectively disposed therein (col. 6, lines 1-18).

Regarding claim 13, dependent on claim 9, Ogino discloses the system wherein the intentional radiator comprises a frequency conversion circuit (45) that reads on radio frequency module (col. 7, lines 15-20).

Regarding claim 14 & 15, Ogino discloses the method for integrating components, positioning the antenna through an opening, coupling shielding to ground via electrical (soldering is inherent as a typical means) and/or mechanical connection, directly connecting the ground plane to the antenna; and orienting the ground plane such that it is at least partially physically blocks emissions through the opening in the construction of the structural apparatus and integrated system as described above (col. 6, line 19 - col. 7, line 59).

Regarding claims 18 & 19, Ogino discloses an apparatus comprising means for shielding (i.e., housing case coupled to ground plane) including an opening for an antenna and a means for coupling the shielding to the ground plane that is oriented to at least partially physically block emissions through the opening, the ground plane being directly connected to the antenna, wherein the means for shielding comprising one of a metallic paint or a metallic enclosure and the coupling means comprises one of a mechanical connector or a soldered connection (i.e., the through-holes and copper etching) (col. 6, line 61- col. 7, line 4 and lines 30-37).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogino, in view of Nichols, U.S. Patent No. U.S. Patent No. 5,691,726.

Regarding claims 6 and 10, dependent on claims 4 and 9, respectively. Ogino discloses the limitations of claims 4 and 9. Ogino fails to explicitly mention the apparatus further including a skin covering the opening. However, in a similar field of endeavor Nichols provides evidence of such.

Nichols discloses a plastic radome (60) which encloses the microstrip antenna element, printed circuit board and electrical components (col.4 ,lines 51-56 and Fig. 3).

At the time of the invention it would have been obvious to one of ordinary skill in the art to have modified Ogino to include a "system skin" in addition to a housing type of shielding for the purpose of providing separate shielding for the intentional radiator to radiate.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Q Nguyen whose telephone number is 7036054254. The examiner can normally be reached on 8:30AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on 703-305-4778. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-9508 for regular communications and 703-305-9508 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

DN

David Nguyen

July 22, 2003

DWAYNE BOST
SUPERVISORY PATENT EXAMINER
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